DOCUMENT RESUME

ED 237 898 CG 017 153

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TITLE MMPI Characteristics of False Negatives on the MacAndrew Alcoholism Scale.
PUB DATE Aug 83
NOTE 10p.; Paper presented at the Annual Convention of the American Psychological Association (91st, Anaheim, CA, August 26-30, 1983).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adults; Alcohol Education; *Alcoholism; Counseling Techniques; Emotional Problems; Females; Predictive Measurement; Psychological Evaluation; *Psychological Patterns; Psychopathology; Rehabilitation Programs
IDENTIFIERS *Denial (Psychology); *MacAndrew Alcoholism Scale; Minnesota Multiphasic Personality Inventory

ABSTRACT

The MacAndrew Alcoholism Scale (MAC) of the Minnesota Mulltiphasic Personality Inventory (MMPI) identifies individuals who are likely to abuse alcohol with an accuracy percentage ranging from 60 to 82 percent. The percentage of false negatives when using this scale range from 3 to 17 percent. In order to investigate the characteristics of false negative scorers on the MAC, 41 admissions to an inpatient alcohol treatment program were administered the MMPI and subsequently divided into true positive (N=31) and false negative (N=10) groups according to a MAC cutoff score of 24. Scores of both groups on MMPI subscales and indexes were contrasted. An analysis of the results showed that members of the false negative group were consistently characterized by a general pattern of denial and refusal to acknowledge the presence of any psychopathology. In analyzing the data by sex, 50 percent of the women in the study fell within the false negative category, which may suggest that caution be used in administering the MAC to women. A pattern of scores on the MMPI suggesting denial could alert the alcoholism counselor to the necessity of dealing directly with the rationalization. (BL)

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MMPI Characteristics of False Negatives on the MacAndrew Alcoholism Scale

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MMPI Characteristics of False Negatives
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Abstract

Little attention has been paid to whether false negatives on the MacAndrew Alcoholism Scale share characteristics which could be used to identify them as a distinct subgroup of alcoholics. Ten false negative and 31 true positive alcoholic inpatients were contrasted on a variety of MMPI scales. The patients in the false negative group were consistently characterized by a general pattern of denial and refusal to acknowledge psychopathology throughout the MMPI. The implications of these findings for treatment of alcoholics who are false negatives on the MAC are discussed.

MMPI Characteristics of False Negatives
on the MacAndrew Alcoholism Scale

The MacAndrew Alcoholism Scale (MAC: MacAndrew, 1965), which is one of the many special scales on the Minnesota Multiphasic Personality Inventory (MMPI: Hathaway & McKinley, 1967), is generally recognized as a valid means of identifying patients in a variety of treatment settings who are likely to abuse alcohol with the percentage of patients correctly classified ranging between 60 and 82 percent (cf. Clopton, 1978). Researchers have differed on the exact cutting score that yields the best classification rate. MacAndrew suggested that a cutting score of 24 should be used while other investigators have found that cutting scores from 26 to 28 resulted in the highest percentage of correct classifications. Regardless of the exact cutting score that is used, all investigators have reported that a number of alcoholics are incorrectly classified as nonalcoholic (false negatives). The percentage of false negatives in these studies has ranged from as low as 3 percent (Schwartz & Graham, 1979) to as high as 17 percent (Atsaides, Neuringer, & Davis, 1977; Whisler & Cantor, 1966). The general procedure in most studies of the MAC is to determine the cutting score which provides the highest rate of correct classification with little attention paid to whether there are specific characteristics of either the false negatives or false positives on the MAC. The present study examined those

patients who were false negatives on the MAC to determine if they shared characteristics which might be used to identify them as a distinct subgroup of alcoholics.

Method

The 44 subjects were consecutive admissions to a 28-day inpatient treatment program for alcoholism which was housed in a 16-bed unit of a general hospital. The MMPI is administered routinely to all patients in the treatment program as soon as they are detoxified and judged capable of completing the MMPI which ranges from 2 to 7 days following admission. All patients easily meet the DSM-III criteria for alcohol abuse, and the few patients within the program who were not primary abusers of alcohol were excluded from the study.

These 44 patients were divided into two groups based on their raw score on the MAC. The 32 patients with raw scores of 24 or higher on the MAC (true positives) became one group, and the 12 patients with raw scores less than 24 (false negatives) became the second group. If a cutting score of 26 or higher had been used, 4 more patients would have been classified as false negatives. The implications of various cutting scores on the identification of subgroups of alcoholics will be discussed below. A cutting score of 24 was used in the initial analysis because it was the most conservative measure in the identification of false negatives since all of these patients were alcoholics. Three patients were excluded from further analysis because of invalid MMPIs:

one patient in the true positive group endorsed 9 of the 16 repeated items inconsistently; one patient in the false negative group omitted 201 items; and the other patient in the false negative group endorsed 13 of the 16 repeated items inconsistently. Thus, there were 31 patients in the true positive and 10 patients in the false negative group.

In an attempt to see whether the patients in the false negative group could be identified as a subgroup of alcoholics their scores on a number of scales/indexes were examined: the four standard validity scales (?, L, F, K); the Gough Dissimulation Scale-revised (Ds-r: Gough, 1957); the Welsh Anxiety and Repression Scales; the sum of the differences between the five Wiener and Harmon obvious and subtle scales (Wiener, 1948); high-point pairs; and the number of clinical scales greater than a T-score of 69.

Results

The scores of the false negative and true positive groups on the various scales/indexes are presented in Table 1. The false negative group scored significantly lower than the true positive group on the F Scale, the Gough Ds-r Scale, the sum of the differences between the Wiener and Harmon obvious and subtle scales, and the Cannot Say scale. There also was a trend ($p < .10$) for the false negative group to have fewer clinical scales elevated over a T-score of 69, and to have a higher T-score on the K-scale.

Using a cutting score of 24 on the MAC, 50 percent of the female patients (7/14) and 11 percent of the male

patients (3/27) were identified as false negatives. The small sample sizes precluded statistical analysis for sex differences either within or between groups, and inspection of the data did not reveal any readily apparent sex differences.

Discussion

The scores on the various scales/indexes that were contrasted between the false negative and true positive group appear to fit a consistent pattern which could be characterized as a denial of or refusal to admit the presence of psychopathology in the false negative group. In fact, the differences on all of the scales that were examined fit this same general pattern of a denial of psychopathology even though some scales were not statistically significant because of the limited sample size. Not only was this pattern of scores evident on a group basis, but inspection of individual patient's scores within the false negative group identified only one patient who did not fit this pattern. Thus, it appears that a patient can adopt a strategy of denying psychopathology which also can result in the lack of utility of the MAC in identifying problems with alcoholism.

The fact that 50 percent of the female patients were classified as false negatives would indicate that caution is suggested when the MAC is used with women. There were no apparent differences on the MMPI or in other demographic/social variables between the male and female patients in the false negative group which would readily

account for this high percentage of incorrect classifications. The recent increase in interest in alcoholism in women should facilitate the examination of the issue of the utility of the MAC in female populations.

A final issue which is worthy of closer examination is the long-term treatment outcome of the false negative group. The Alcoholics Anonymous philosophy of treatment suggests the importance of the patient's acknowledgement of his/her powerlessness over alcohol as the first step in treatment (Alcoholics Anonymous, 1952). If the patients in the false negative group are still using denial and rationalization to deal with their alcoholism even when they are in an alcohol treatment program, it does not seem likely that they will be successful in combating their alcoholism. Long-term follow-up data would be needed to validate this suggestion. If it is supported, then a pattern of scores suggesting denial on the MMPI with a history of alcoholism could alert the clinician/alcohol counselor of the necessity of directly dealing with the denial and rationalization in a rigorous fashion throughout the treatment program. Information on the long-term course of the patients in both groups is currently being collected.

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Table 1

Descriptive Statistics for False Negatives and True Positives on MacAndrew Alcoholism Scale

Scale/Index	False Negatives	True Positives
N	10	31
Age		
Mean	44.4	36.4
SD	14.0	11.2
MacAndrew Alcoholism Scale[a]		
Mean	20.4	29.5
SD	2.8	3.6
Gough Dissimulation[b]		
Mean	51.6	62.4
SD	8.3	16.1
Welsh Anxiety Scale[b]		
Mean	57.7	62.6
SD	12.1	12.2
Welsh Repression Scale[b]		
Mean	67.5	61.3
SD	15.3	11.1
Σ (Obvious - Subtle)		
Mean	29.6	70.2
SD	42.8	75.9
Cannot Say Scale[a]		
Mean	5.0	1.2
SD	7.1	2.7
Lie Scale[b]		
Mean	48.1	45.5
SD	6.2	5.8
F Scale[b]		
Mean	55.5	64.5
SD	3.4	13.5
K Scale[b]		
Mean	53.7	48.4
SD	8.2	8.7
Number of Clinical Scales > 69		
Mean	2.5	3.9
SD	2.0	2.6

[b] T-score [a] Raw score